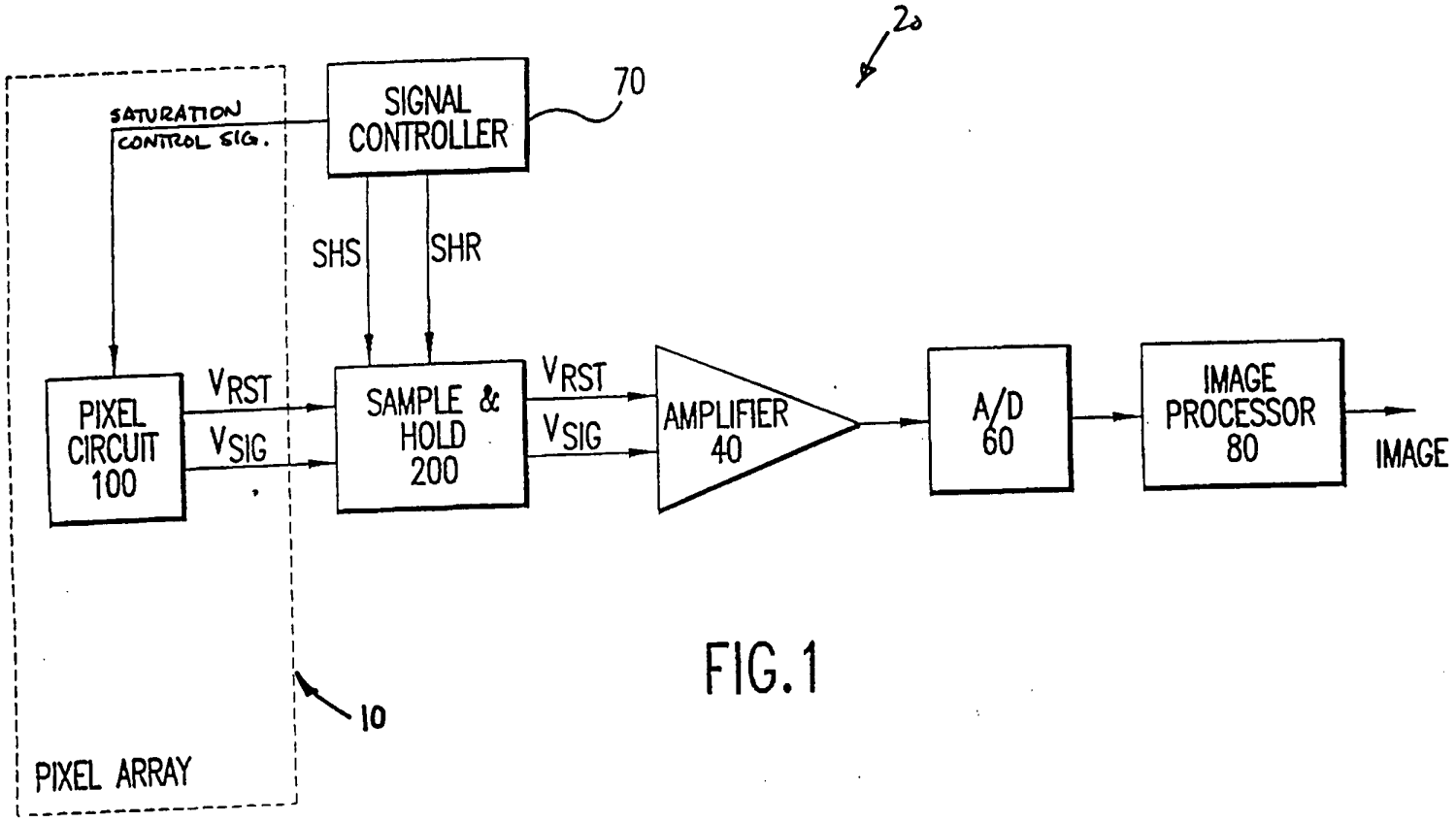
20
SATURATION CONTROL SIG.
SIGNAL CONTROLLER
70
SHS
SHR
PIXEL CIRCUIT 100
VRST
VSIG
SAMPLE & HOLD 200
VRST
VSIG
AMPLIFIER 40
A/D 60
IMAGE PROCESSOR 80
IMAGE
10
PIXEL ARRAY

FIG.1

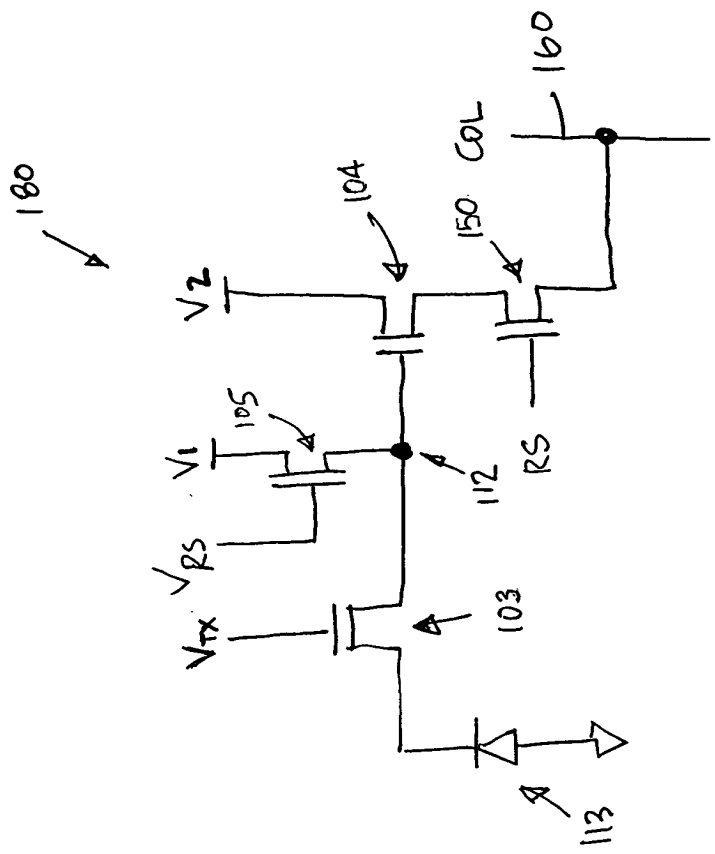

FIG. 2A

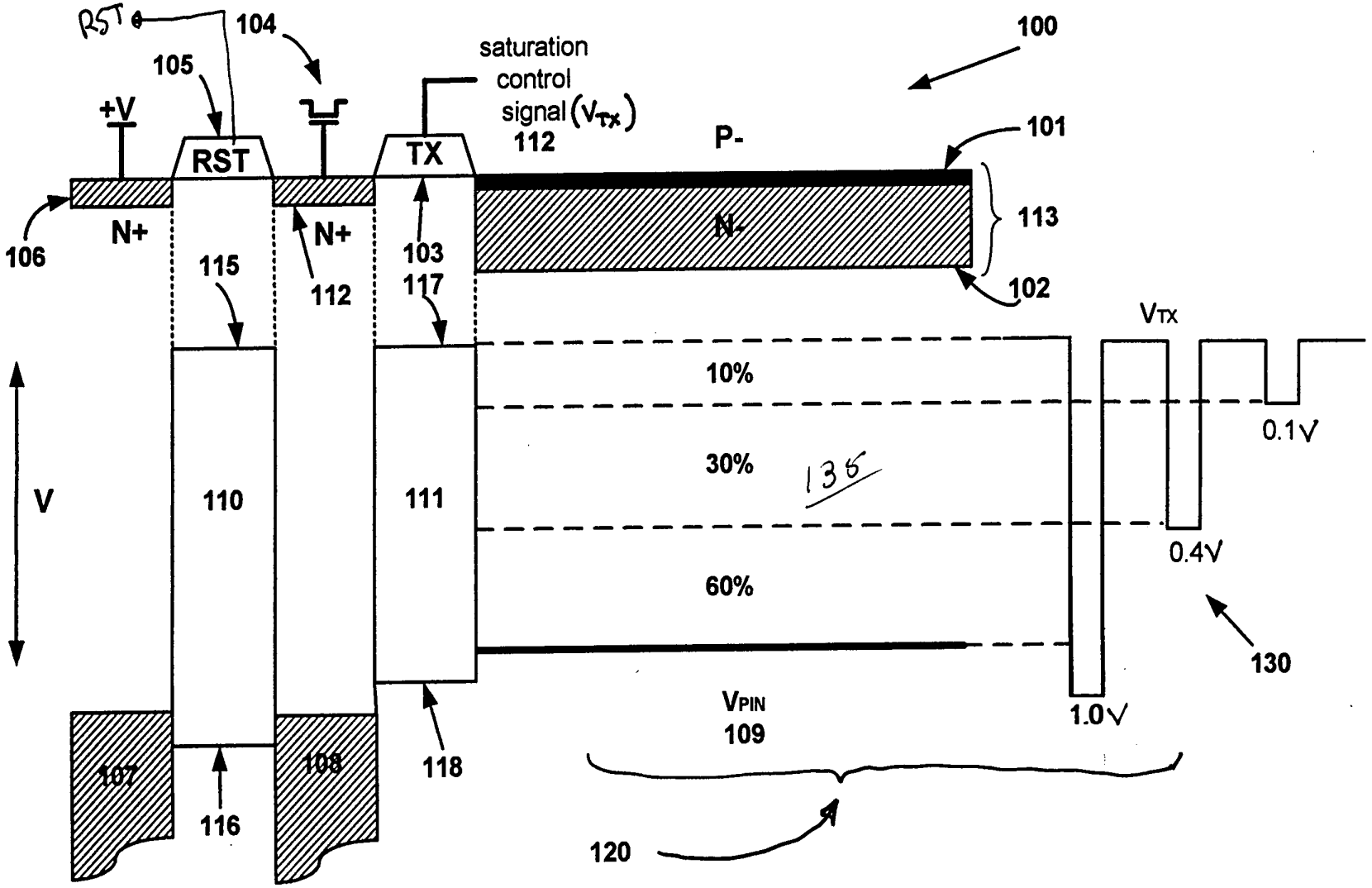
RST
104
105
saturation
control
signal (V_{TX})
112
100
+V
RST
TX
P-
101
106
N+
N+
N-
113
115
112
103
117
102
V_{TX}
10%
0.1V
V
110
111
30%
135
0.4V
60%
130
V_{PIN}
109
1.0V
107
108
118
116
120

FIG. 2B

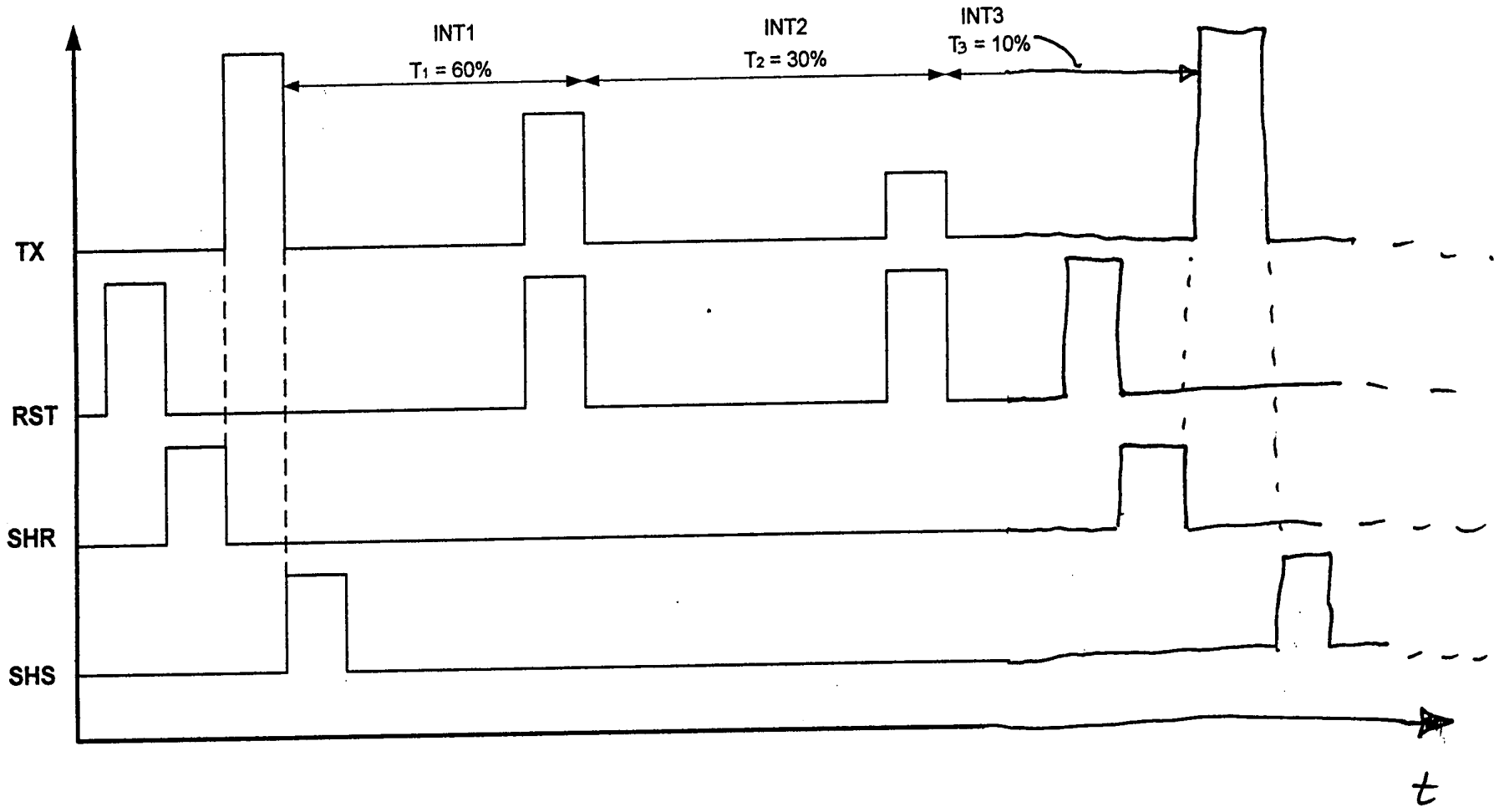

FIG. 3

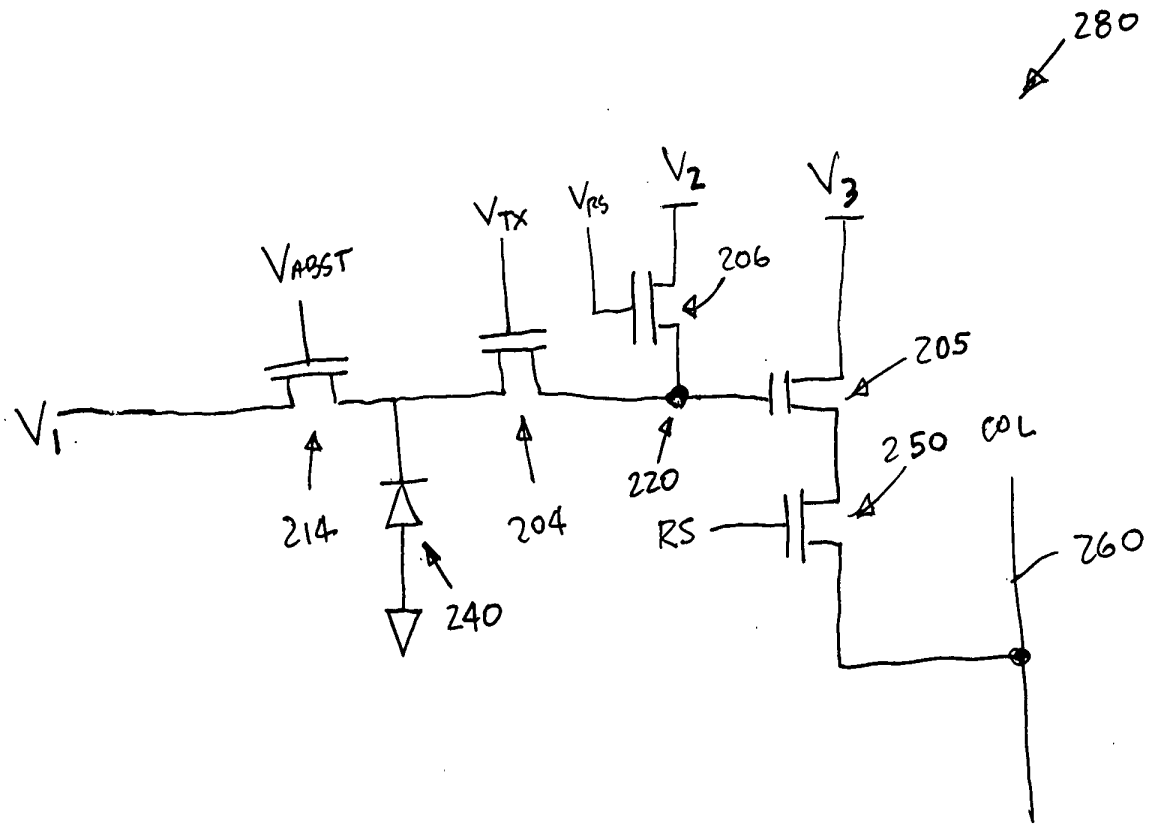

FIG 4A

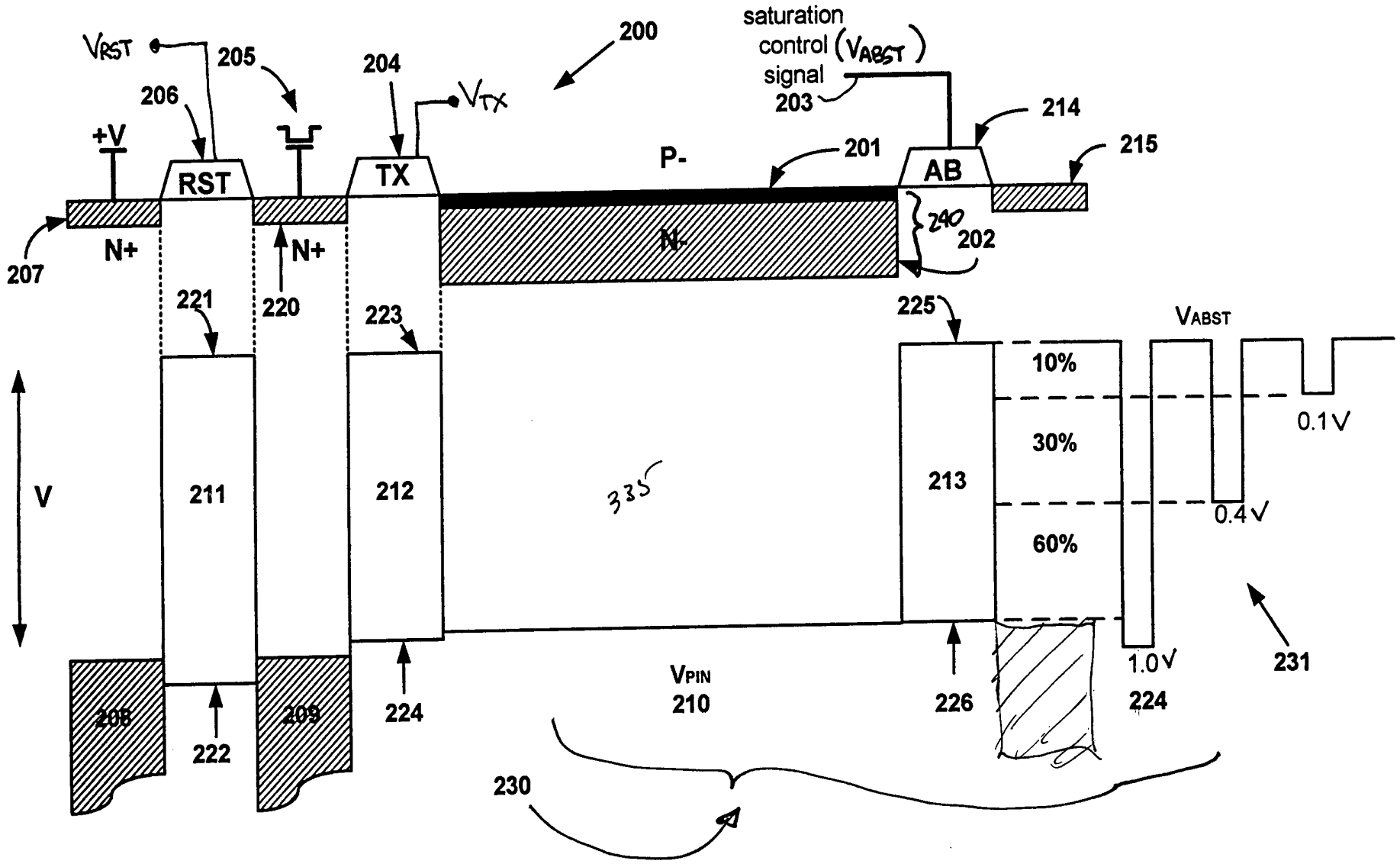
VRST
205
206
+V
RST
204
VTX
TX
200
saturation
control (VABST)
signal
203
214
215
AB
P-
201
N+
N+
N-
207
240
202
221
220
223
225
VABST
10%
30%
60%
0.1V
0.4V
1.0V
V
211
212
213
335
231
VPIN
210
226
224
208
209
222
224
230

FIG. 4B

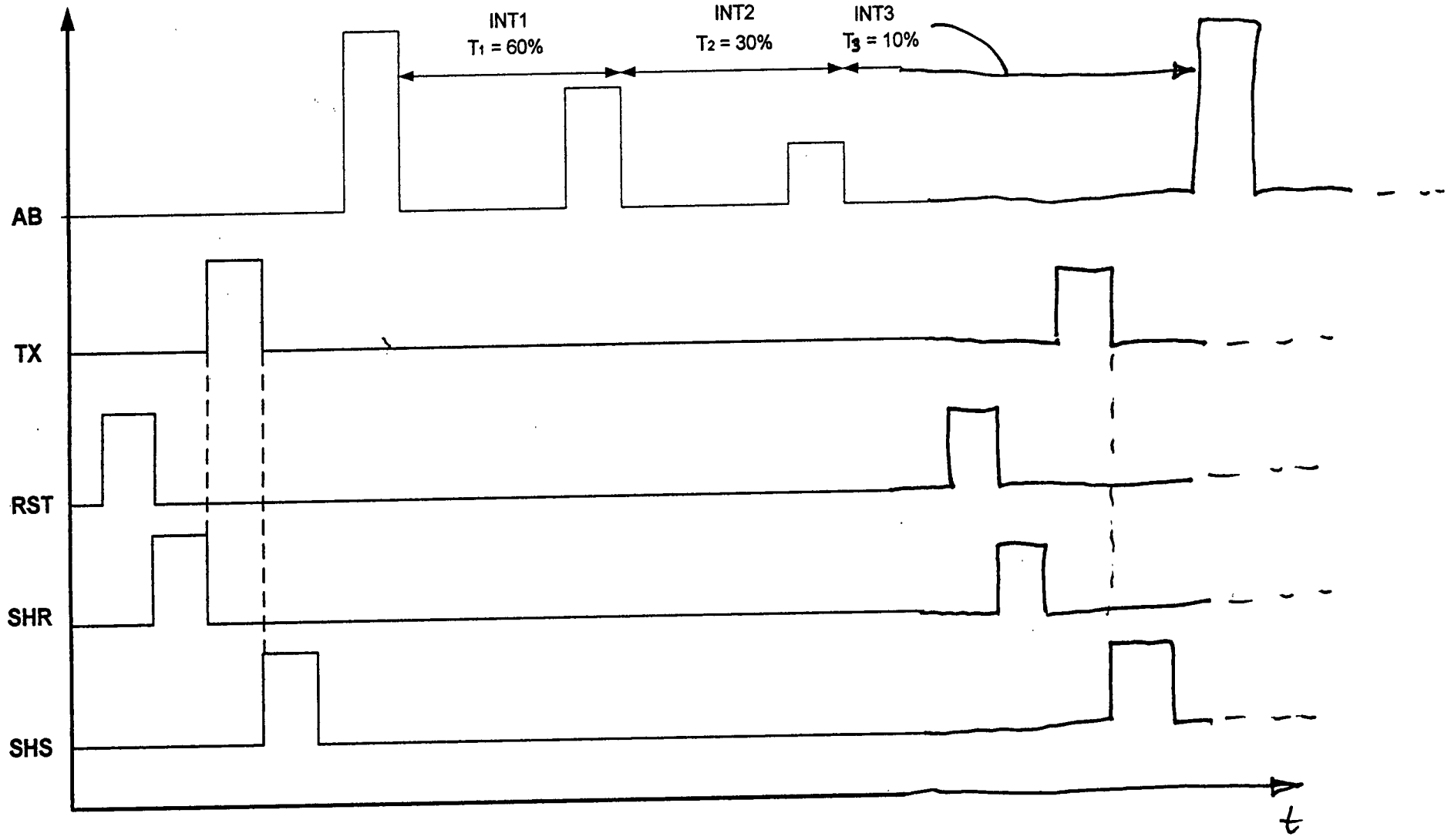

FIG. 5

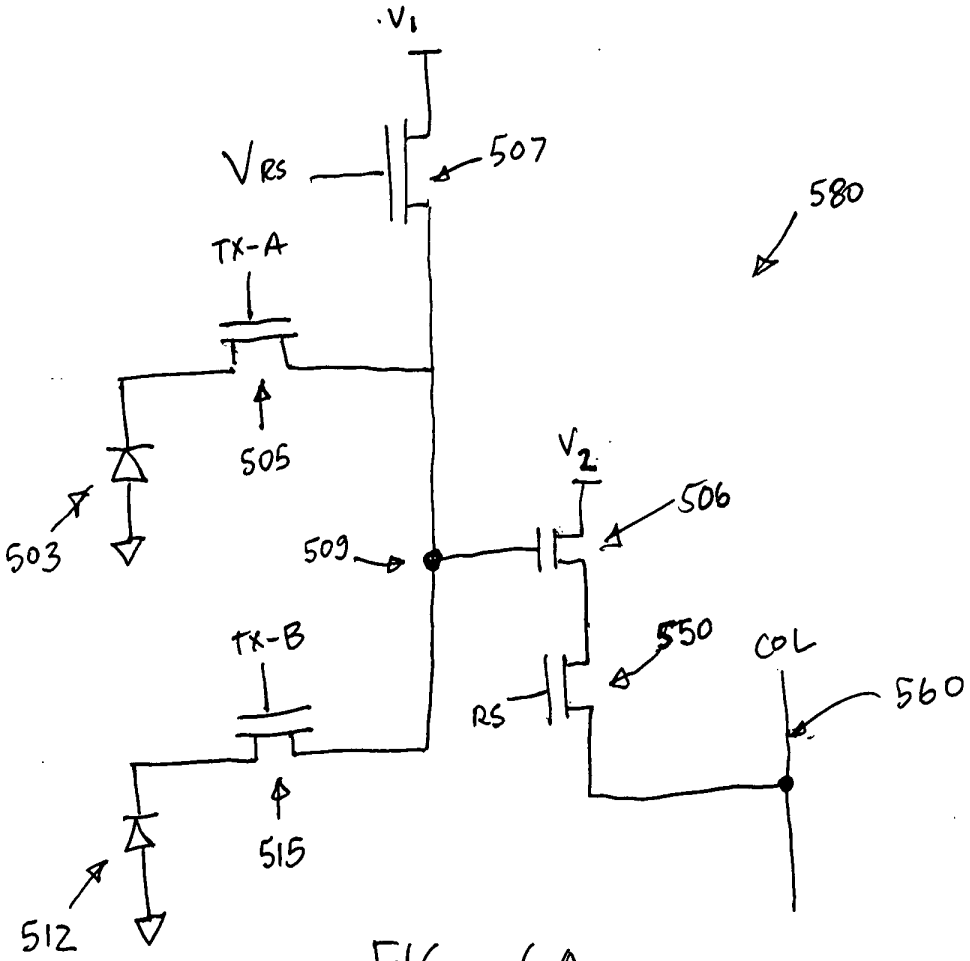

FIG. 6A

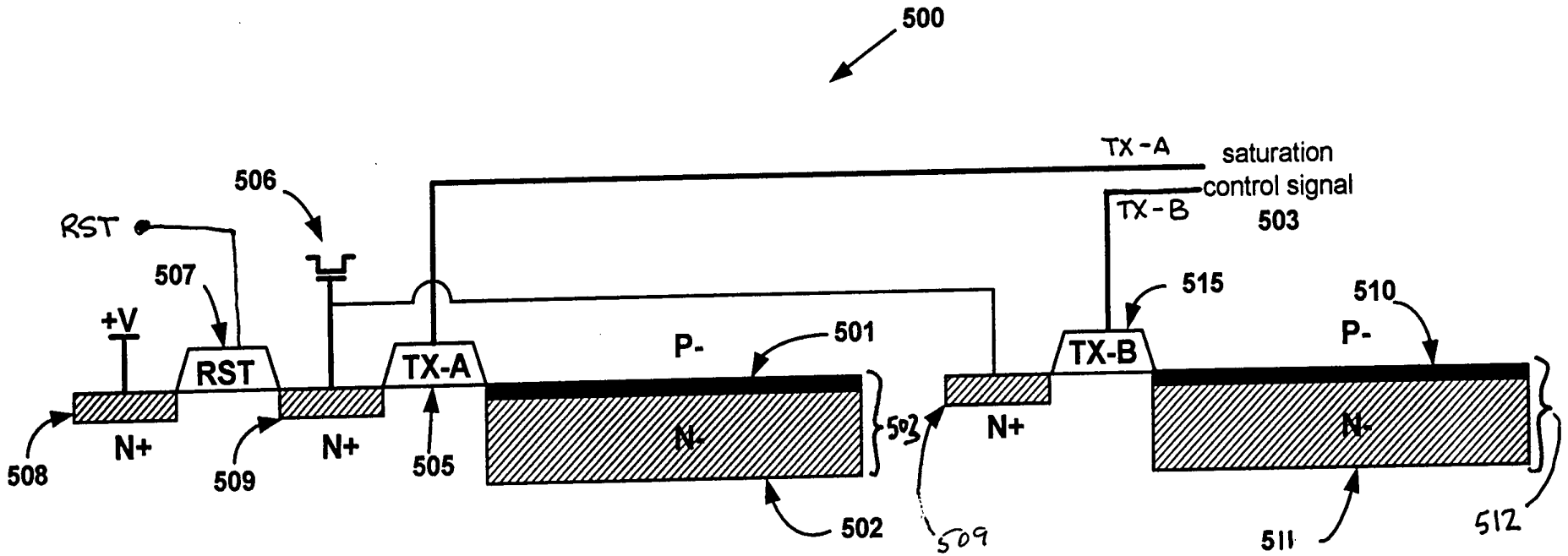
500
TX-A
saturation
control signal
503
TX-B
506
RST
507
+V
RST
TX-A
P-
501
TX-B
515
510
P-
508
N+
509
N+
505
N-
502
503
N+
N-
509
511
512

FIG. 6B

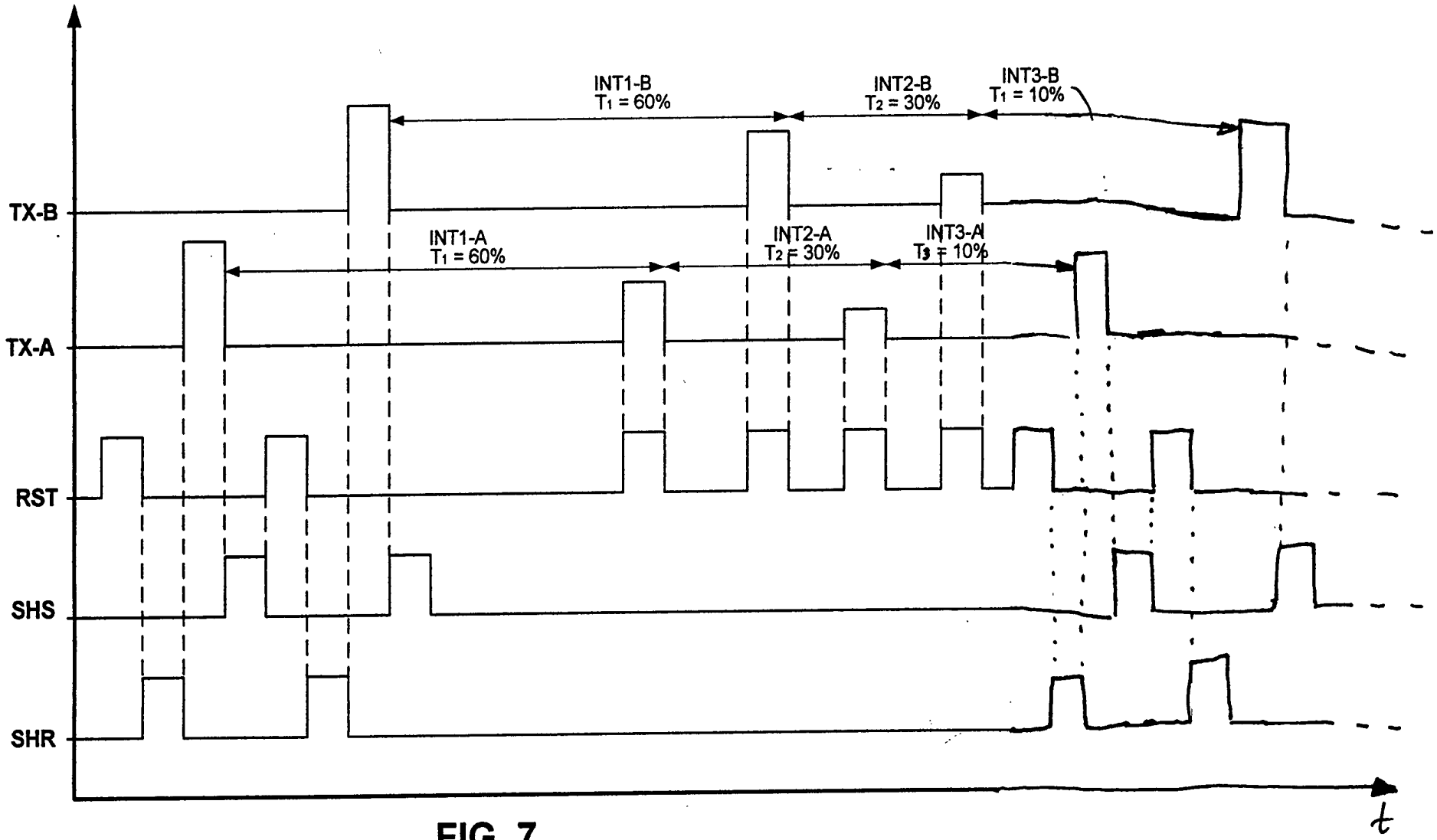
INT1-B
T1 = 60%
INT2-B
T2 = 30%
INT3-B
T1 = 10%
TX-B
INT1-A
T1 = 60%
INT2-A
T2 = 30%
INT3-A
T3 = 10%
TX-A
RST
SHS
SHR
t

FIG. 7

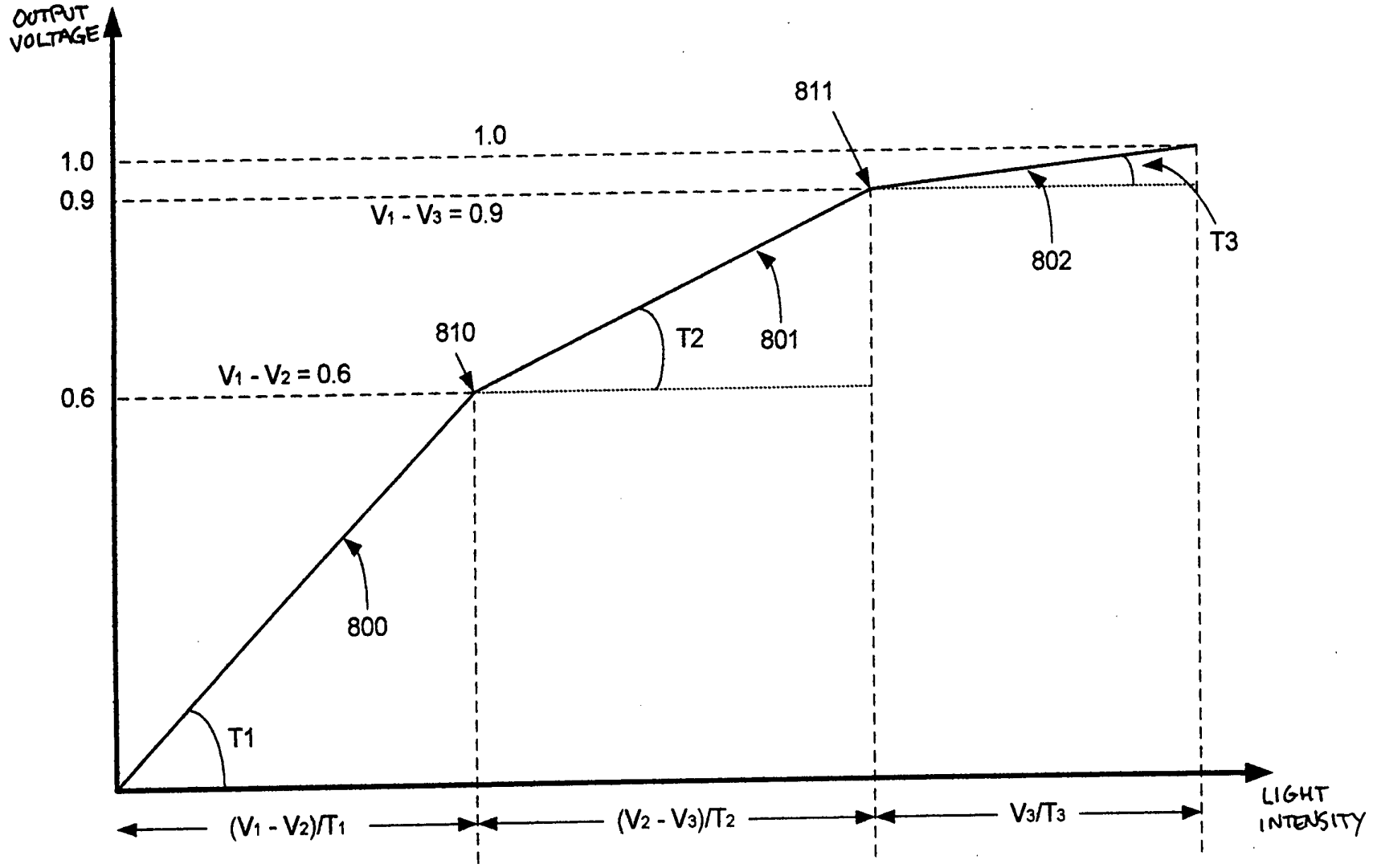
OUTPUT VOLTAGE
1.0
0.9
0.6
1.0
V1 - V3 = 0.9
V1 - V2 = 0.6
811
810
802
T3
T2
801
800
T1
LIGHT INTENSITY
(V1 - V2)/T1
(V2 - V3)/T2
V3/T3

FIG. 8

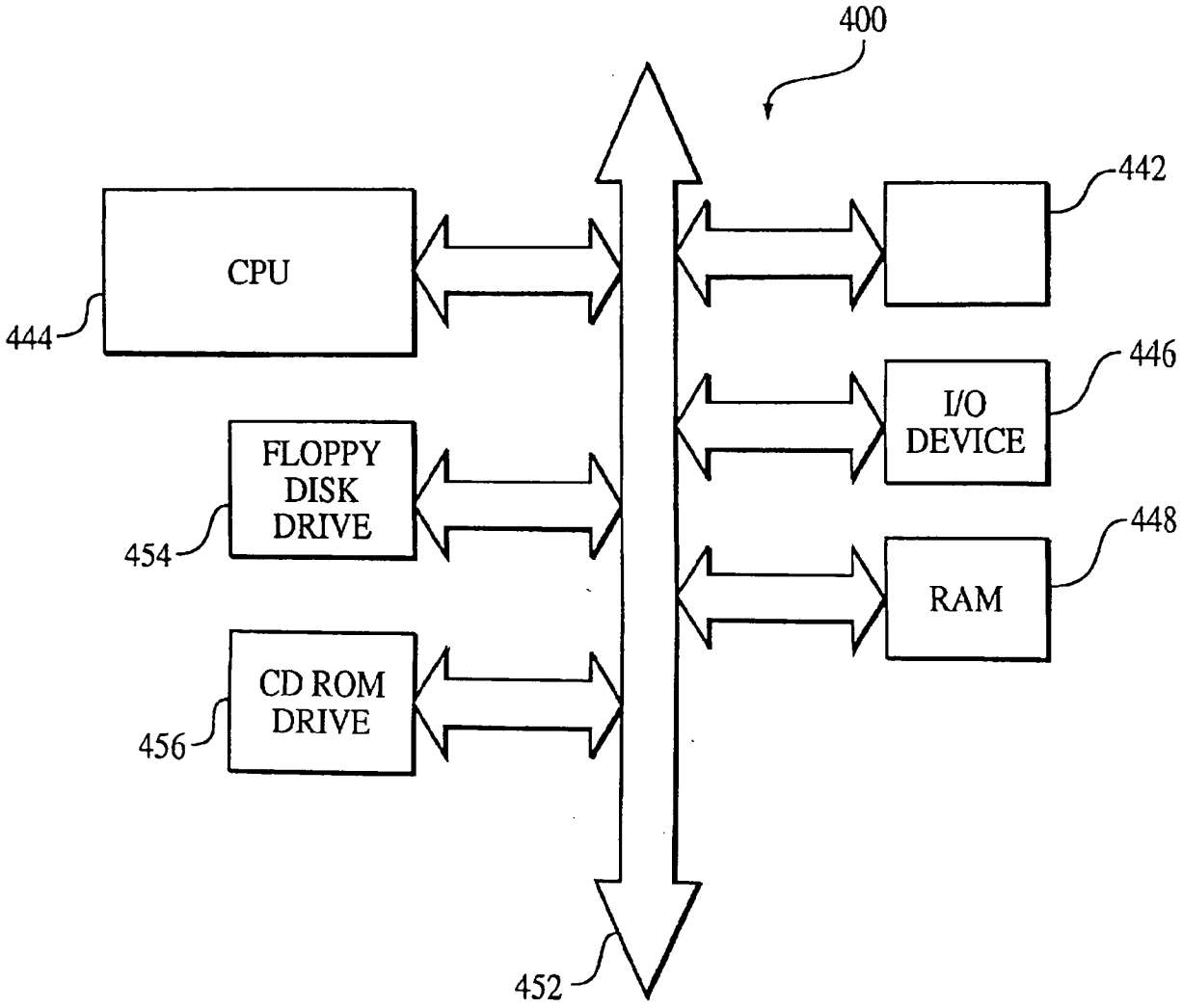
400
442
CPU
444
446
I/O
DEVICE
FLOPPY
DISK
DRIVE
454
448
RAM
CD ROM
DRIVE
456
452

FIG. 9